

DEFINED BENEFIT/DEFINED CONTRIBUTION: A COMPARISON

by

Robert D. Krinsky, President  
Martin E. Segal Company

POLICY FORUM ON FEDERAL RETIREMENT

December 13, 1983

A comparison involves an analysis of two or more items to determine similarities and differences. Unfortunately, comparisons of defined benefit and defined contribution plans usually focus on the differences and treat the two types of plans as competitive rather than complementary.

In the past few years, the press and trade journals have devoted considerable attention to the relatively small number of corporations that have terminated defined benefit plans and in some cases substituted a defined contribution plan. This focus implies that the two types of plans are competitive and that a thorough evaluation will indicate which one is best for a particular situation. In fact, however, a large and growing number of private and public employees participate in both defined benefit and defined contribution plans - and the plans complement each other in meeting the retirement income needs of covered employees.

I hope that we all leave this policy forum with a "complementary perspective". It seems to us that both the public and private sectors should view defined benefit and defined contribution plans as complementary rather than competitive.

### Prevalence of Defined Benefit Plans

Defined benefit plans predominate in the public sector. Almost all full-time public employees are covered by retirement systems that provide pensions based, in whole or in part, on the member's final average salary. With the exception of public higher education employees who participate in TIAA-CREF plans, a very small proportion of public employees are covered by a "basic" retirement system that provides money purchase retirement benefits, i.e., benefits determined solely by the actuarial conversion of an accumulated account. Historically, a relatively large number of public employees were covered by combination plans (plans that used a money purchase approach with respect to employee contributions and a final average salary formula to determine the benefits provided from employer funds) but most of these so-called combination plans have now been converted to full defined benefit plans.

Among public employees covered by retirement systems, practically all federal employees and more than nine out of ten state and local employees who qualify for retirement benefits will have their benefits determined on the basis of some measure of final average salary. Given the recent trends in inflation and public employee salaries, the advantages to covered employees of final average salary benefit formulas are obvious.

While other methods have been used to adjust the benefit structure of retirement plans to recognize economic changes up to the point of retirement, basing benefits on final average salary appears to be the most systematic and equitable method of automatically protecting the real value of benefits in relation to rising salaries. Under this type of benefit formula the basic purpose of the retirement system - to replace some portion of earnings, depending on length of service, in the event of old age, disability and death - is directly related to existing economic conditions. Moreover, final average salary benefit formulas reward employees who realize a steep progression in salary and may thereby encourage long-term service and provide an incentive for improved performance.

In addition, federal retirement systems and a majority of state and local systems have dealt with the issue of protecting the purchasing power of retirement benefits during the lengthening retirement period. In general, the benefits provided by Social Security and federal retirement systems have been fully adjusted for rising prices as measured by the CPI; state and local retirement systems, on the other hand, have used a wide variety of approaches to adjust benefits after retirement and partially protect the erosion in purchasing power caused by rising prices.

#### Supplemental Defined Contribution Plans

Given the history of public employee retirement systems and the prevalence of final average salary defined benefit plans, we suspect that the "basic retirement benefits" for a new federal employee are likely to be provided through a defined benefit retirement system. Your Committee and the Congress may also want to evaluate the implications of creating one or more "supplemental plans" which provide benefits based on the amount accumulated in an individual's account.

Recent changes in federal law have expanded the number of supplemental retirement plans which are or could be made available to public employees. The expanded availability of these plans may alter how employees perceive and plan for retirement. In the future, we expect that the retirement decisions of an increasing number of public employees will be influenced not only by the level of benefits provided by the "basic" defined benefit retirement system, but also by the dollar amount accumulated by the employee under various "supplemental" defined-contribution-type plans.

Supplemental plans which are or could be made available to public employees include the following:

- Section 457 plans (public employee deferred compensation)
- Section 403(b) plans (tax sheltered annuities for school employees)
- Section 401(k) plans (cash or deferred plans)
- Thrift plans
- Individual retirement accounts
- Deductible voluntary employee contributions
- Employer pick-up plans (per Section 414(h)(2))

Although the technical elements of these supplemental plans vary significantly, they share at least three common characteristics: (1) all are defined contribution plans; (2) the contributions are tax deferred - at least for federal income tax purposes; and (3) participation in these plans is voluntary - with the exception of most 414(h) employer pick-up plans.

The characteristics of supplemental plans complement some emerging trends affecting retirement, and offer a tax-sheltered means for public employees to save for retirement. A series of events have combined to increase the popularity of defined contribution plans. The growth of these plans in the private sector invites a "me too" approach in the public sector. While many public employees prefer the few decisions required by defined benefit retirement systems (typically limited to payment option), a growing number recognize the desirability of tailoring retirement income to meet their own specific income and tax planning requirements. Voluntary supplemental defined contribution plans offer this flexibility.

Our experience indicates that a growing number of public employees are now prepared to make the investment decisions required in many supplemental plans. Inflation and fluctuating interest rates during the past decade encouraged many people to forsake the passive security of their savings accounts for the less familiar territory of money market funds and special time deposits. Economic changes required new investment decisions, expanded the availability of new investment products, and resulted in a substantial increase in the investment awareness of many employees.

Supplemental defined contribution plans offer some current income tax relief, especially to that enlarged and growing class of public employees who are members of two wage-earner families. The assumption is, of course, that Congress will not materially alter the tax-favored treatment which employees now expect to enjoy when they reach retirement age and begin to receive the "taxable" benefits of these supplemental plans.

The Social Security Amendments of 1983 provide an opportunity - and a challenge - to develop creatively-designed retirement programs for new federal employees. We suggest that consideration be given to the feasibility of developing defined benefit and defined contribution plans designed in a complementary fashion to meet specified retirement income objectives. As a basic structure for a new program, your Committee may want to consider the implications of establishing a "basic" defined benefit plan and at the same time offering new federal employees the opportunity to participate in one or more "supplemental" defined contribution plans.

#### Comparison of Major Features

In view of the topic assigned to me, I feel compelled to make some brief comments on the major features of defined contribution and defined benefit plans.

The EBRI volume - Economic Survival in Retirement: Which Pension Is For You? (1982) - comprises articles presented at a May 20, 1982 policy forum on understanding the differences between defined benefit and defined contribution plans. The "Forward" by Dallas Salisbury suggests that the relative attractiveness of defined contribution and defined benefit plans is changing, but that the recent emphasis on defined contribution plans has not been accompanied by a thorough examination of the potential effects of such plans on future retirement income security.

In his "Introduction" to the EBRI volume, my colleague Robert Paul points out that:

"Today, workers who are entering the labor force for the first time are exposed to a different type of environment. Private defined benefit plans and defined contribution plans are now taken for granted. Past service is not as important in the minds of today's young workers, because they have a full career in which to earn a retirement benefit. Thus, people are asking themselves: Which pension is the better alternative? Which retirement income components offer an effective blend? Do we need both defined benefit and defined contribution plans?

Moreover, there are more and more two-worker families. Both members of such families may consider individual savings opportunities as well as the questions surrounding the options of defined contribution and/or defined benefit plans.

Finally, there is the general question of whose responsibility it is to provide retirement income. Is it the government's responsibility? Is it the private employer's responsibility? Is it the individual's responsibility? Or is it the responsibility of all three parties?

There is increasing emphasis today on the notion that it is up to individuals to provide a greater portion of their own retirement income security. This is also contributing to our reexamination of the issues surrounding the question of Economic Survival in Retirement: Which Pension Is for You?"

To a large degree, Bob Paul's introductory comments also apply to new federal employees. As compared with almost all current federal employees, they will definitely be exposed to a different retirement program structure. Because new federal employees will be covered under Social Security, the extent to which the various types of Social Security benefits meet the economic needs of a typical new federal employee needs to be recognized - and the structure of the new retirement program needs to take account of Social Security coverage.

You are all familiar with the major differences between defined benefit and defined contribution plans. (See the EBRI volume for a discussion of differences from various perspectives: a labor perspective, a corporate perspective, and a participant's perspective.)

The difference in employer commitment is basic: the employer undertakes to provide a specified level of retirement income in the defined benefit plan, and to make a specified contribution to individually-allocated investment accounts in a defined contribution plan. In terms of individual equity, the principle underlying a defined benefit plan is one of "equal benefits" - whereas a defined contribution plan generally defines individual equity in terms of "equal contributions" and accepts the necessarily unequal benefits that result from equal employer contributions.

A defined contribution plan that is strictly a money-purchase arrangement is necessarily prospective. Benefits derive only from contributions and investment income after the plan begins. The employee's length of service or salary history prior to the creation of the plan is ignored. A defined benefit plan, on the other hand, is usually retrospective as well as prospective. In the early years of the plan a significant part of the employer contribution is usually allocated to financing benefits based on service rendered before the plan became effective.

Another major difference between the plans - one that is frequently emphasized - is the party who bears the risk of future investment performance. A defined benefit plan deals directly with the level of benefits to be provided for covered employees, whereas the benefits produced by defined contribution plans vary depending on future investment performance (and possibly certain other factors such as terminations and future profits).

Because investment risk is borne by the employee in a defined contribution plan, some people feel that employees "own" the assets in such a plan to a greater degree than in a defined benefit plan. However, if pensions are perceived essentially as a form of deferred compensation, differences

between the plans can be considered primarily in terms of individual equity in relation to a given employer contribution - rather than in terms of who "owns" the assets. We understand that this broad "ownership issue" (which encompasses the issues of benefit security and benefit guarantees) is important to certain federal employee unions, because they believe that a defined contribution plan can be structured in a manner that results in "ownership" and control of the assets by covered employees. On the other hand, Congress apparently retains the authority to amend the provisions of defined benefit plans covering most federal employees.

In considering the design of retirement programs for new federal employees, your Committee will undoubtedly want to evaluate this "ownership-benefit guarantee issue", and consider the differences, if any, in Congress' authority to modify the provisions of defined benefit or defined contribution retirement programs for new federal employees.

#### Allocation of Contributions

Contributions required to finance the benefits promised by a defined benefit plan can vary. Variability depends on numerous factors, including changes in the characteristics of participants, the investment return on plan assets, and changes in the benefit design itself. For most defined benefit plans in the public sector, contributions are determined on the basis of a specific actuarial funding method which seeks to smooth contribution requirements as a percentage of payroll over a long period. Contributions are determined on an aggregate basis for all participants rather than on an individual basis. This last point is sometimes overlooked by those who do not realize that employer contributions to a defined benefit plan may have little relationship to the value of benefits earned by a specific employee during that year. Rather, the employer contributions reflect the overall funding requirements of the plan and are not allocated to individual accounts.



A substantial majority of public employee retirement systems are contributory defined benefit plans. Such plans maintain individual accounts for each participant and generally provide that the amount in the employee's contribution account will be refunded upon termination of service. Some employees covered by contributory defined benefit plans incorrectly perceive the employer contribution as also "belonging" to the participant, and this gives rise to some of the confusion surrounding the "ownership issue". A participant who terminates before vesting and elects to receive a refund of his contributions to a defined benefit plan does not forfeit employer contributions which "belong" to him. Employer contributions to a defined benefit plan are not allocated to individual employee accounts, but rather reflect the amount needed, in aggregate, to fund the benefits promised in accordance with the established funding method.

The contribution-oriented character of a defined contribution plan tends to direct attention to the level of the contribution and the dollar amount accumulated in an individual's account. Unfortunately, this focus on the total dollar amount of the account is often not accompanied by even a very rough notion of the level of lifetime pension benefits that can be provided by the accumulated amount. Moreover, individuals participating in defined contribution plans may not realize that the amount of retirement income produced by the plan depends on market conditions prevailing at retirement; identical account balances will produce monthly annuities that vary considerably depending on interest and annuity rates in effect at the time of retirement.

#### Summary of Differences

A schedule summarizing differences between defined benefit and defined contribution plans is attached. Some brief comments on a few of the differences follow:

- Early vesting. Defined contribution plans generally have very early vesting. This feature is attractive to new employees who do not expect to remain in service long enough to vest under a defined benefit

plan. The "longer-staying" employees - including those new employees who do not expect to remain in covered employment but actually do! - may see it differently: (a) early vesting uses some of the financial resources of the plan for a short-term employee, and (b) it requires the plan to maintain many relatively small individual accounts for a long period of time.

- Early distribution and loan provisions. A defined contribution plan usually provides for payouts from the employee's account in the event of termination of covered employment (even if termination occurs years before actual retirement), and it may also have provisions for emergency loans. Both of these features are attractive for some employees.
- Disability pensions and death benefits. A defined benefit plan makes whatever provision it considers desirable for these contingencies. Under a defined contribution plan, on the other hand, all that is immediately available for disability pensions and death benefits is the balance in an individual's account - and in the early years of the plan that balance will not be substantial. While this problem can be solved in a defined contribution plan, it requires separating a piece of the contribution and using it to buy disability insurance or death benefits, or both.
- Post-retirement benefit adjustments. As noted, public employee retirement systems have used a variety of methods to adjust benefits after retirement. The ability of a defined benefit plan to partially compensate retirees for the erosion in purchasing power caused by rising prices is largely

a function of the employer's willingness to contribute more to the plan. Under the defined contribution rationale, however, all employer contributions for a given employee have already been made prior to retirement. When viewed in this perspective, defined contribution plans are more limited in coping with the post-retirement adjustment problem than defined benefit plans. In another sense, however, the development of variable annuities and automatic "investment-sharing provisions" indicate that defined contribution plans can incorporate mechanisms providing for benefit adjustments related to investment performance during the retirement period.

#### Concerns Regarding Defined Contribution Plans

A comprehensive public policy regarding defined contribution plans apparently has not been formulated. However, recent federal legislation has had the effect of encouraging the development of such plans. A variety of tax provisions enacted in recent years have tended to "favor" defined contribution plans, and others have had the effect of impeding the development of defined benefit plans.

Several individuals and organizations have expressed concerns regarding the growing popularity of defined contribution plans. Our concerns include such issues as lump sum payouts, plan costs, cost/benefit comparisons, and investment results.

Lump sum payouts. As noted, defined contribution plans usually provide for lump sum distributions (which now receive more favorable tax treatment). If an employee's "basic" retirement benefits are to be provided through a defined contribution plan, should public policy favor distributions in the form of lifetime pension payments rather than lump sum distributions? How will the increasing utilization of lump sum payouts affect future retirement benefit levels?

Plan costs. For a given contribution, a defined benefit plan can generally provide more in the way of retirement benefits than a defined contribution plan. This results from the greater flexibility in financing defined benefit plans (which do not have to be fully funded), the relatively larger forfeitures in such plans, and the ability to take forfeitures into account in advance in a defined benefit plan. These cost considerations are often overlooked by proponents of defined contribution plans, who tend to emphasize only that certain categories of employees are likely to receive larger retirement benefits from a defined contribution plan than from a defined benefit plan.

Cost/benefit comparisons. Studies comparing the costs and benefits of the two types of plans may be misleading (sometimes inadvertently and sometimes deliberately). In some instances comparisons are made on the basis of investment return assumptions that vary substantially - as if it is reasonable to assume that the assets of the defined benefit plan will earn an average return of 7% or 8%, but that the assets of the defined contribution plan will produce a much higher rate of return. In addition, some cost/benefit comparisons totally ignore future salary increases and the differences in projected replacement ratios resulting from changes in assumed rates of investment return and salary increases.

The table which follows shows the replacement ratios resulting from a 1%-of-salary annual contribution based on various combinations of investment return rates and salary increases. To take one example, consider an employee who enters service at age 35 and retires at 65 under a defined contribution plan with a 5%-of-pay annual contribution: the replacement rate for this employee will be 18.5% of final salary if the investment return/salary increase combination is 7%/6%, and 24.0% based on a 9%/7% combination. (In this example the replacement rate produced by a 9%/7% combination is almost 30% higher than the replacement rate produced by a 7%/6% combination!) In our opinion, meaningful cost/benefit comparisons should include full consideration of the replacement ratios that will be produced by various economic environments.

DEFINED CONTRIBUTION PLAN ACCUMULATIONS  
PROJECTED REPLACEMENT RATIOS

Ratios of (a) retirement income produced by a 1%-of-salary annual contribution, to  
(b) final salary during the year prior to retirement at age 65

Rates of investment return/salary increases	Entry Age							
	25	30	35	40	45	50	55	60
7/5	6.3%	5.2%	4.3%	3.4%	2.6%	1.8%	1.2%	0.6%
7/5½	5.7	4.8	4.0	3.2	2.4	1.8	1.1	0.5
7/6	5.2	4.4	3.7	3.0	2.3	1.7	1.1	0.5
8/6	6.7	5.6	4.5	3.6	2.7	2.0	1.2	0.6
8/6½	6.1	5.1	4.2	3.4	2.6	1.9	1.2	0.6
8/7	5.5	4.7	3.9	3.2	2.5	1.8	1.2	0.6
9/7	7.1	5.9	4.8	3.8	2.9	2.1	1.3	0.6
9/7½	6.5	5.4	4.5	3.6	2.8	2.0	1.3	0.6
9/8	5.9	5.0	4.2	3.4	2.7	1.9	1.3	0.6

- Notes: (1) Annuity conversion based on 1971 Group Annuity Mortality Table.  
(2) To convert above ratios to percent of final average salary (rather than percent of final salary), multiply by the following:

Assumed Annual Salary Increase	3-Year Average	5-Year Average
5	1.049	1.100
5½	1.054	1.110
6	1.059	1.120
6½	1.064	1.130
7	1.068	1.140
7½	1.073	1.150
8	1.078	1.160

Investment results. The increasing emphasis on individual responsibility for retirement savings - and the trend toward giving individuals more flexibility in allocating retirement savings to various investment media - raise broad questions regarding the adequacy of future retirement benefits. A recent examination of IRA investment patterns (see March 1983 EBRI Issue Brief, "Individual Savings For Retirement: A Closer Look") indicates that only about 17% of all IRA assets were in accounts that achieved an 8.7% to 9% annual real rate of return over the 5 years ended December, 1982. The average real rate of return for the remaining 83% of IRA holders was less than 1% over this 5-year period. Based on its analysis of IRA investment returns, EBRI concluded that: "The choices made by IRA investors and the real rates of return they have achieved to date do not support the arguments or assumptions of those advocating proposals for greater reliance on IRAs." We agree that proposals placing greater emphasis on individual responsibility for retirement savings need to be thoroughly evaluated.

\* \* \*

Defined benefit and defined contribution plans offer different approaches to retirement savings. Neither is perfect. Consequently, we expect that an increasing number of employees will be covered by both types of plans. In our opinion the two types of plans should be viewed as complementary rather than competitive. Both defined benefit and defined contribution plans should continue to have a role in our aggregate retirement income system.

Defined Benefit Plan and  
Defined Contribution Plan

<u>Feature</u>	<u>Defined Benefit</u>	<u>Defined Contribution</u>
Benefit for future service	Defined formula, considered supportable by overall financing of the plan.	What the accumulation in the employee's account can buy or support.
Benefit for past service	Formula defined by the plan.	None.
Increase amendment for prior service	Defined formula.	Not possible.
Disability pension	Defined formula.	Account balance, unless part of contribution is used to buy disability insurance.
Death benefits	Defined formula.	Account balance, unless part of contribution is used to buy life insurance.
Vesting	10 years covered service, or less, as fixed by plan.	Early vesting, such as immediate or 1-5 years covered service.
Early retirement	As provided by plan.	What the employee's accumulation can buy or support.
Pension payments	Life annuity or joint-and-survivor or other options offered by plan.	Lump sum or similar range of options offered by plan.
Early cash-outs on termination	Possible, but not simple to administer.	Possible and relatively simple.
Loan from the plan	Possible, but not simple to administer.	Relatively simple.
Investment experience	Gains and losses - for plan as a whole, benefits not directly affected.	Gains and losses - individual employee accounts affected directly.
Investment options	No options offered to employee.	Options usually offered to employee.
Administration	Maintenance of "regular data base" - periodic actuarial valuations, at least once every three years.	Maintenance of individual accounts - periodic valuation of account balances, usually several times a year.